

CLAIM OR CLAIMS

I claim:

1. A method of computing an error bound that indicates how well a nonbinary hypothesis function approximates a nonbinary target function, the method comprising:

forming an optimization problem in which error bounds for some basis functions and the outputs of the basis functions over a set of out-of-sample inputs are used to form a set of constraints on the outputs of the target function over the out-of-sample inputs and in which the objective is to bound the average over the set of out-of-sample inputs of an error function based on hypothesis function outputs and target function outputs, subject to the constraints on the target function outputs

and solving the optimization problem to produce a hypothesis function error bound.

2. The method of claim 1, implemented using a general purpose computer.

3. The method of claim 1, where the optimization problem is an integer linear program.

4. The method of claim 1, where the optimization problem is a linear program.

5. The method of claim 1, where the hypothesis function is developed by applying fusion to the basis functions.

6. The method of claim 1, with additional constraints derived by validating lower bounds on out-of-sample error.

7. The method of claim 1, with additional constraints derived by validating the frequency distribution of the target function output.